REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1, 3-4, 7-25, 29, and 31-34 are currently pending in this application. No new matter has been added by way of the present amendment. For instance, the amendments to claims 1, 13, 14, 29 and 33 find support at, for example, page 8, lines 37-40 of the Specification. Accordingly, no new matter has been added.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

Issues Under 35 U.S.C. § 102(b)

Claim 14 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Bernier et al. (U.S. 5,834,571) (hereinafter Bernier '571) "for the reasons adequately set forth from paragraph 6 of the office action of June 3, 2008." Applicants respectfully traverse.

The Examiner asserts that Bernier '571 discloses a method of producing a polymer in a continuously operated gas phase reactor, polymerizing at least one monomer in a bed containing an active catalyst and adjusting a discharge rate to withdraw a polymer product from the reactor.

The Examiner further asserts that Bernier '571 inherently teaches (1) adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization; (2) separately recovering particle agglomerates from the reactor; and (3) providing a control valve that is adjusted to provide for pulsating operation. Moreover, the Examiner argues that "applicants must recognize that Bernier et al. (figure, [item] 44 (valve 48)) disclose[s] the first outlet nozzle where the polymers are continuously withdrawn. Regarding the

claimed "second outlet nozzle", Bernier et al. (figure, item 50) clearly disclose a second outlet nozzle for separately recovering particle agglomerates from the reactor" (emphasis in original).

Applicants respectfully disagree and submit that the Examiner has failed to establish a *prima facie* case of anticipation. For anticipation under 35 U.S.C.§102, the reference must teach each and every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

Claim 14 is directed, *inter alia*, to a method of producing a polymer in a continuously operated gas phase reactor, comprising the steps of polymerizing at least one monomer in a bed containing an active catalyst, continuously withdrawing polymer powder from the reactor through a first outlet nozzle, adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates through a second outlet nozzle, wherein the discharge rate of the polymer powder is adjusted by using a continuously operated control valve, the operation of the control valve is adjusted by using a control signal obtained from a bed level controller, and wherein the control valve is adjusted to provide for pulsating operation to prevent clogging of the valve, wherein the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1. Bernier '571 fails to teach a method as claimed.

Bernier '571 discloses a gas phase polymerization process wherein a stream of monomer and gas is introduced into a polymerization zone and at least one liquid component is provided. Bernier '571 does not explicitly or implicitly disclose a method of producing a polymer in a continuously operated gas phase reactor, by continuously withdrawing polymer powder from the reactor and discontinuously withdrawing particle agglomerates, wherein the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1.

In the process of Bernier '571, olefins (e.g., ethylene) are polymerized in a fluidized bed reactor (12). The catalyst is fed into the reactor through the catalyst feed line (42) (see col. 18, lines 34-37). Gaseous reactants are fed through the gas recycle line (22) (see col. 17, line 18-20) at a point below the bed (26) (see col. 17, lines 18-20). The gaseous reactants are withdrawn from the top of the reactor via a velocity reduction section (14) (see col. 17, lines 25-27).

Based on the Examiner's comments on the Office Action of June 3, 2008, it appeared hat the Examiner considered the polymer carried by the fluidization gas through the velocity reduction zone (14) into the gas recycle line (22) as being "continuously withdrawn." It also appeared that the Examiner considered the withdrawal of polymer via the polymer withdrawal line (44) through valve (48) as representing "intermittent withdrawal of the agglomerates". The Rule 132 Declaration filed on November 3, 2008 addressed these issues.

It appears, however, that the Examiner has now changed his position and line of reasoning, and now argues that the polymer is continuously withdrawn through the valve (48) into the product discharge tank (46). The Examiner further argues that the polymer powder

would be withdrawn continuously through the valve (52) and the agglomerates would be withdrawn discontinuously through the valve (50). Applicants respectfully and strongly disagree.

The Examiner's attention is respectfully directed to col. 19, lines 41-45 of Bernier '571, where Bernier discusses the product withdrawal. As is evidenced by Bernier's disclosure, the specific embodiment of the figure is used for **intermittent withdrawal only** (emphasis added) for the reasons discussed below.

Initially, Applicants note that the valve (48) is open (see col. 19, line 41). When the product has entered the discharge tank (46), the valve (48) closes and the product is allowed to settle in the discharge tank (46) (see col. 19, lines 43-44). One skilled in the art would immediately recognize that the embodiment of the figure is applicable to intermittent withdrawal only.

While Bernier '571 briefly mentions continuous withdrawal, it does not in any way teach how to utilize continuous withdrawal in practice. Bernier '571 does not explicitly or implicitly disclose that either valve (48) or (52) could be always (continuously) open. Therefore, one skilled in the art would not have used the embodiment of the figure with continuous withdrawal, as this has no basis in Bernier '571. If the process of the figure of Bernier '571 could in some way be used for continuous withdrawal of polymer, then that process could not be operated for a long period in a stable fashion, as lumps would form in the reactor, and the valve (48) would be plugged by the lumps. As a result, no polymer could be withdrawn from the reactor, and the reactor would have to be shut down.

Moreover, assuming *arguendo* that the apparatus shown in the figure of Bernier '571 could be used for continuous withdrawal, it would still not lead to the present invention. Bernier

'571 discloses that the polymer settles in the product discharge tank (46) (see col. 19, lines 43-44). The polymer is then withdrawn through the valve (52), as described in lines 30-32, while valve (50) releases the fluid to surge tank (62) (see lines 36-37). Thus, Bernier '571 discloses that fluid (i.e., the gas) is withdrawn through valve (50), but does not in any way teach that agglomerates would be withdrawn that way. In fact, it would not be possible to withdraw agglomerates through the valve (50) because, as described by Bernier '571 in lines 43-44, the polymer settles in the product discharge tank (46). As a result, the agglomerates, being heavier that the polymer powder, would fall into the bottom of the tank and would be withdrawn through the valve (52).

As is known in the art, in conventional gas phase reactors (as the one described in the figure of Bernier '571), only a very small amount of polymer dust, having a particle size much smaller than 100 mm (and typically less than 50 mm), follows the gas from the product discharge tank (56) to the surge tank (62). Agglomerates with a particle size of 6 mm or more are not found in the gas stream. In stark contrast, the present invention defines the polymer agglomerates as being formed of polymer particles that have been at least partly fused together and have a thickness of at least 6 mm (see page 7, lines 23-25 of the Specification). These polymer agglomerates would not be carried with the gas stream through the valve (50) simply because they would, immediately upon entering the tank (46), fall into the bottom of the tank (together with the polymer powder). Applicants thus submit that, even if one skilled in the art attempted to use the embodiment of the figure of Bernier '571 for continuous withdrawal, there is still no teaching in Bernier '571 with regard to withdrawal of the agglomerates through valve (50). Even if the gas stream through valve (50) was strong enough such that it could carry the agglomerates

from the top of the tank (46) through valve (50), it would not be possible to prevent the polymer powder, which has a smaller particle size, from following the gas stream through valve (50). Moreover, if the polymer would follow the gas through valve (50), then the ratio of the amount of polymer withdrawn through valve (52) to the amount of polymer withdrawn through valve (50) would be less than 1:1. Evidently, if the gas could carry the agglomerates having a size of 6 mm or more, it would also carry the particles of size from 150 to 4000 mm (0.15 to 4 mm) through valve (50). In view of the above, Applicants submit that the withdrawal of agglomerates through valve (50) is not an option and is not in any way taught by Bernier '571.

Furthermore, assuming *arguendo* that one skilled in the art was able to use the embodiment of the figure of Bernier '571 for continuous withdrawal, and somehow managed to remove the agglomerates through valve (50) without at the same time removing all the particulate polymer the same way, Bernier '571 would still not disclose the presently claimed invention. There is absolutely no teaching in Bernier '571 with regards to valve (52) being open continuously while simultaneously operating valve (50) intermittently.

Bernier '571 teaches that fluid (i.e., gas) is released through valve (50) to the surge tank (62). If valve (48) were continuously open, then gas would also continuously flow into the product discharge tank (46), and release gas valve (50) would also need to be continuously open. Thus, the intermittent operation of valve (50) has no basis in Bernier '571.

As noted above, the Examiner has asserted that Bernier '571 "inherently" meets the limitations of the present invention. However, as is evident from the discussion above, the Examiner's assumptions (use of the embodiment of the figure for continuous withdrawal,

withdrawal of agglomerates through valve 50, and discontinuous operation of valve 50) are without basis and thus incorrect.

Applicants also note that the Examiner appears to believe that the same equipment could be used for both continuous and intermittent withdrawal. However, this is not correct. The diameter of the withdrawal pipe must be significantly smaller for continuous withdrawal than for intermittent withdrawal. If this was not the case, the whole reactor would be quickly drained and no polymerization would take place.

Clearly, Bernier '571 fails to explicitly or implicitly teach each and every aspect of the claimed invention, and thus fails to anticipate the same.

Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Issues Under 35 U.S.C. § 103(a)

Claims 1, 3, 4, 7-25, 29, 31-32 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bernier '571 "for the reasons adequately set forth from paragraph 8 of non-final office action of November 30, 2007". Additionally, claim 33 stands rejected as obvious over Bernier '571 in view of Koves (U.S. 4,959,198) (hereinafter Koves '198). Applicants respectfully traverse.

Initially, Applicants note that the Office Action of November 30, 2007 rejected these claims over Bernier '571 in view of de Lorenzo et al. (U.S. 4,535,134). However, there is no mention of de Lorenzo in the present Office Action. Thus, the claims cannot possibly be rejected "for the reasons adequately set forth from paragraph 8 of non-final office action of November 30,

2007", as the prior art relied upon by the Examiner in the outstanding Office Action is different than that relied upon in the Office Action of November 30, 2007.

Moreover, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Additionally, there must be a reason why one of ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* The Supreme Court of the United States has recently held that the "teaching, suggestion, motivation test" is a valid test for obviousness, albeit one which cannot be too rigidly applied. *Id.* Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

As previously discussed, Bernier '571 fails to teach a method of producing a polymer in a continuously operated gas phase reactor, comprising the steps of polymerizing at least one monomer in a bed containing an active catalyst, continuously withdrawing polymer powder from the reactor through a first outlet nozzle, adjusting a discharge rate of the polymer powder so as to maintain a constant bed level during polymerization and separately recovering particle agglomerates from the reactor by discontinuously withdrawing the particle agglomerates through

a second outlet nozzle, wherein the ratio between the polymer powder continuously discharged from the reactor and the polymer particle agglomerates discontinuously withdrawn is in the range of 1:1 to 10,000:1.

Moreover, the Examiner has not provided any reason or rationale to modify the teachings of Bernier '571 as proposed. Accordingly, Applicants submit that the present rejection is improper and should be withdrawn.

Reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Vanessa Perez-Ramos, Reg. No. 61,158, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated:

APR 01 2009

Respectfully submitted,

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